CLAIMS:

1. Porous material for catalytic conversion of exhaust gases, said porous material (1) comprising a carrier with a first porous structure (2, 2'), and an oxidation catalyst (OX) which in the presence of oxygen (O_2), according to a first reaction (3), has the ability to catalyse oxidation of nitrogen monoxide (NO) into nitrogen dioxide (NO_2) and, according to a second reaction, to catalyse oxidation of a reducing agent (HC),
characterized in that the oxidation catalyst (OX) is enclosed inside the first porous structure (2, 2'), which has such dimensions that the reducing agent (HC) is sterically prevented (4, 4') from coming into contact with the oxidation catalyst (OX), in order to enable primarily the first reaction (3), out of said first and second reactions, to take place over the oxidation catalyst (OX) during the catalytic conversion of the exhaust gases.

2. Porous material for catalytic conversion of exhaust gases according to claim 1, said porous material (1) further comprising a carrier with a second porous structure (5, 5') and a reduction catalyst (RED), which in the presence of the reducing agent (HC) is able to selectively catalyse reduction of nitrogen dioxide (NO_2) into nitrogen (N_2), according to a third reaction (6), whereby the reducing agent (HC) participates in the third reaction (6) and is at least partially consumed,
characterized in that the reduction catalyst (RED) is located in the second porous structure (5, 5'), which has such dimensions that the reducing agent (HC) can come into contact with the reduction catalyst (RED) in order to enable the third reaction (6) to take place.

3. Porous material for catalytic conversion of exhaust gases according to claim 2, c h a r a c t e r i z e d i n that the first porous structure (2, 2') on an average exhibits smaller entrances (7) for the reducing agent (HC) than the second porous structure (5, 5'), and preferably that the first porous structure primarily comprises pores having an effective size of 3-6 Å.

4. Porous material for catalytic conversion of exhaust gases according to claim 2 or 3, c h a r a c t e r i z e d i n that both the first (2, 2') and the second (5, 5') porous structures are provided in the same layer/coating of the porous material.

5. Porous material for catalytic conversion of exhaust gases according to claims 2 or 3, c h a r a c t e r i z e d i n that the first (2, 2') and the second porous structures (5, 5') are provided in different layers/coatings of the porous material.

6. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-5, c h a r a c t e r i z e d i n that the carrier with the second porous structure (5, 5') has been adapted to molecule size and/or adsorption properties of the reducing agent (HC).

7. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-6, c h a r a c t e r i z e d i n that the ratio between oxidation catalyst (OX) and reduction catalyst (RED) has been optimized so that the production of nitrogen dioxide (NO_2), according to the first reaction (3), essentially corresponds to the consumption of nitrogen dioxide (NO_2), according to the third reaction (6).

8. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-7, further comprising a first portion (10) and a second portion (11), wherein the first portion (10) is intended to receive the exhaust gases (12) before the second portion (11) during the catalytic conversion,
c h a r a c t e r i z e d i n that the first portion (10) contains a larger quantity of the oxidation catalyst (OX) than the second portion (11), whereas the second portion (11) contains a larger quantity of the reduction catalyst (RED) than the first portion (10).

9. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-8,
c h a r a c t e r i z e d i n that the first (2, 2') and/or the second (5, 5') porous structure is provided in a carrier which is a zeolite crystal structure.

10. Porous material for catalytic conversion of exhaust gases according to claim 9,
c h a r a c t e r i z e d i n that the porous material comprises a first zeolite (14), providing the first porous structure (2, 2'), and a second zeolite (15), providing the second porous structure (5, 5').

11. Porous material for catalytic conversion of exhaust gases according to claim 10,
c h a r a c t e r i z e d i n that the porous material comprises a physical mixture (13) of the first zeolite (14) and the second zeolite (15).

12. Porous material for catalytic conversion of exhaust gases according to claim 10,
c h a r a c t e r i z e d i n that the porous material comprises a layered structure (16, 17) of the first zeolite (14) and the second zeolite (15), wherein said first and

second zeolites (14, 15), depending on the expected composition of the exhaust gases (12) which are to be catalytically converted, have been arranged in relation to each other in said layered structure (16, 17), preferably so that the second zeolite (15) will encounter the exhaust gases (12) before the first zeolite (14) during the catalytic conversion.

13. Porous material for catalytic conversion of exhaust gases according to claim 10,
c h a r a c t e r i z e d i n that the second zeolite, providing the second porous structure (5, 5'), has been applied by over-growth onto the first zeolite, providing the first porous structure (2, 2').

14. Porous material for catalytic conversion of exhaust gases according to anyone of claims 10-13,
c h a r a c t e r i z e d i n that the content of oxidation catalyst (OX) has been reduced in outer layers (8) of the first zeolite by means of regulating penetration depth and/or dispersion.

15. Porous material for catalytic conversion of exhaust gases according to any one of claims 10-14,
c h a r a c t e r i z e d i n that an additional zeolite crystal layer with a reduced content of oxidation catalyst (OX) has been crystallized onto the crystal structure of the first zeolite.

16. Porous material for catalytic conversion of exhaust gases according to any one of claims 10-15,
c h a r a c t e r i z e d i n that the crystal structure of the first zeolite comprises crystal grains having a grain size (9) and a shape which has been optimized both in order to prevent access for the reducing agent (HC), and in order to allow effective oxidation of NO to NO_2.

17. Porous material for catalytic conversion of exhaust gases according to any one of claims 10-16, characterized in that the first zeolite is a Ferrierite-zeolite or a Chabazite-zeolite.

18. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-14, characterized in that the reducing agent (HC), which is at least partially consumed according to the third reaction (6), is a hydrocarbon (H_xC_y) and/or a chemical compound ($H_xC_yO_zS_w$) further comprising oxygen/and or sulphur.

19. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-18, characterized in that the reduction catalyst is an acidic zeolite catalyst.

20. Porous material for catalytic conversion of exhaust gases according to any one of claims 2-19, characterized in that the reduction catalyst (RED) comprises Brönstedt acid sites, silver (Ag), copper (Cu), Rhodium (Rh), Indium (In), Iridium (Ir), or combinations of these.

21. Porous material for catalytic conversion of exhaust gases according to any one of the preceding claims, characterized in that the oxidation catalyst (OX) comprises platinum (Pt) and/or palladium (Pd).

22. Porous material for catalytic conversion of exhaust gases according to any one of the preceding claims, characterized in that the first or/and the second porous structure is/are provided in carriers attached to a substrate (18).

23. Method for catalytic conversion of exhaust gases, comprising oxidation of nitrogen monoxide (NO) into nitrogen dioxide (NO_2) over an oxidation catalyst (OX), according to a first reaction (3), whereby said oxidation catalyst (OX) also has the ability to, according to a second reaction, catalyse oxidation of a reducing agent (HC),
c h a r a c t e r i z e d i n that the reducing agent (HC) is sterically prevented (4, 4') from coming into contact with the oxidation catalyst (OX), as a result of which primarily the first reaction (3), out of said first and second reactions, takes place over the oxidation catalyst (OX).

24. Method for catalytic conversion of exhaust gases according to claim 23, further comprising a third reaction (6) over a reduction catalyst (RED), wherein nitrogen dioxide (NO_2), in the presence of a reducing agent (HC), is reduced into nitrogen (N_2),
c h a r a c t e r i z e d i n that the reducing agent (HC) participates in the third reaction (6) and thereby is at least partially consumed, in order to provide catalytically converted exhaust gases (12') having a reduced content of nitrogen monoxide (NO), nitrogen dioxide (NO_2) and the reducing agent (HC), and a proportionately low content of dinitrogen oxide (N_2O) and/or carbon monoxide (CO).

25. Method for catalytic conversion of exhaust gases according to claim 23 or 24,
c h a r a c t e r i z e d i n that an additional amount (19, 19', 19'') of reducing agent (HC) is added before reduction takes place over the reduction catalyst (RED), according to the third reaction (6).

26. Method for catalytic conversion of exhaust gases according to claim 25,
c h a r a c t e r i z e d i n that the additional amount (19, 19', 19'') of reducing agent (HC) is regulated on the basis of a measured or previously mapped content (20) of reducing agent (HC) and/or nitrogen oxides (NO_x) in the exhaust gases (12, 12').

27. Method for catalytic conversion of exhaust gases according to claim 26,
c h a r a c t e r i z e d i n that the measured content (20) of reducing agent (HC) or nitrogen oxides (NO_x) in the catalytically converted exhaust gases (12') is used in a diagnostic control system (22) as a measure of the status of the catalytic conversion.

28. Method for catalytic conversion of exhaust gases according to any one of claims 23-27,
c h a r a c t e r i z e d i n that the exhaust gases (12), before oxidation over the oxidation catalyst (OX) according to the first reaction (3), are passed through a device having the ability to store and when necessary release nitrogen oxides (NO_x).

29. Method for catalytic conversion of exhaust gases according to any one of claims 23-28,
c h a r a c t e r i z e d i n that the exhaust gases (12), before oxidation over the oxidation catalyst (OX) according to the first reaction (3), are passed through a device having the ability to store and when necessary release reducing agent (HC).

30. Method for catalytic conversion of exhaust gases according to any one of claims 23-29,
c h a r a c t e r i z e d i n that the temperature of the exhaust gases is regulated (23) in order to be within an

active temperature interval of the oxidation catalyst (OX) and/or the reduction catalyst (RED).

31. Method for catalytic conversion of exhaust gases according to any one of claims 23-30, characterized in that the at least partially catalytically converted exhaust gases, after (21) oxidation over the oxidation catalyst (OX) and reduction over the reduction catalyst (RED), are allowed to pass a second oxidation catalyst (24) over which oxidation of residues of reducing agent (HC) and/or carbon monoxide can take place.

32. Method for catalytic conversion of exhaust gases according to any one of claims 23-31, characterized in that the exhaust gases (12) originate from an internal combustion engine (25), and that the reducing agent (HC) comprises a hydrocarbon (H_xC_y) and/or a chemical compound ($H_xC_yO_zS_w$) further containing oxygen/and or sulphur.

33. Method for catalytic conversion of exhaust gases according to claim 32, characterized in that both the fuel (26) consumption of the internal combustion engine (25), influencing the chemical composition of the exhaust gases (12), and the residue content of nitrogen oxides (NO_x) in the catalytically converted exhaust gases (12') are regulated in order to fulfil relevant legislative regulations.

34. Method for catalytic conversion of exhaust gases according to claim 32 or 33, characterized in that the internal combustion engine (25) is a diesel engine and that the reducing agent (HC) originates from internal combustion in said diesel engine.

35. Method for catalytic conversion of exhaust gases according to claim 34,
c h a r a c t e r i z e d i n that an additional amount (19) of reducing agent (HC) is added via a fuel injector of the diesel engine and/or via a separate injector for additional reducing agent.

36. Use of a porous material, according to any one of claims 2-22, providing functions both for the oxidation of nitrogen monoxide (NO) into nitrogen dioxide (NO_2) and for the reduction of nitrogen dioxide (NO_2) into nitrogen (N_2), for catalytic conversion of exhaust gases (12) which have an oxygen surplus.

37. Arrangement for catalytic conversion of exhaust gases, whereby said exhaust gases (12) originate from an internal combustion engine (25),
c h a r a c t e r i z e d i n that the arrangement comprises a porous material (1) according to any one of claims 1-22.

38. Arrangement for catalytic conversion of exhaust gases according to claim 37,
c h a r a c t e r i z e d i n that the arrangement operates through a method according to any one of claims 23-35.